

REMARKS/ARGUMENTS

The following is a response to the non-final office action mailed June 21, 2004. Claims 1-2, 4-6, and 10-32 remain pending in the instant patent application. No claims are amended or canceled by this response.

The Examiner has rejected all of the pending claims as anticipated under 35 U.S.C. §102(e) by U.S. patent no. 6,733,955 to Geiger et al. ("the Geiger patent"). These claim rejections are traversed as follows.

As a threshold matter, the Examiner is reminded that certain of the pending claims stand rejected as anticipated, and not merely obvious, in light of the Geiger patent:

[t]he distinction between rejections based on 35 U.S.C. § 102 and those based on 35 U.S.C. § 103 should be kept in mind. Under the former, the claim is anticipated by the reference. No question of obviousness is present. In other words, for anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. (Emphasis added; MPEP 706.02)

Here, the Geiger patent fails to teach each and every aspect of the pending independent claims.

Specifically, the Geiger patent relates to a deposition process exploiting the effect of the O₃/TEOS ratio upon rates of oxide deposition over different surfaces, in order to obtain gap fill:

The deposition rate of the O₃/TEOS layer is faster on the lower trench bottom (which is silicon) than on the higher surfaces of the upper portions of the substrate that include the etch stop layer (which is LPCVD nitride or CVD ARC). . . . a predetermined O₃/TEOS ratio can be selected and the relative flow rates are adjusted to achieve that ratio in step 298. It is advantageous to maximize the O₃/TEOS ratio to accelerate the deposition from the trench bottom to achieve planarity. O₃/TEOS ratios of desirably higher than about 10:1, and more desirably about 10:1 to 20:1, can be used. (Emphasis added; col. 8, lines 15-30)

The Geiger patent utilizes a single, predetermined O₃/TEOS ratio in order to achieve preferential deposition rates on the trench bottom versus the trench sides. Thus while the Geiger patent does describe adjusting the flow rates of process gases to achieve that specific ratio, nowhere does the Geiger patent teach a deposition process wherein these gas flows are changed

Appl. No. 09/905,053
Amdt. dated September 21, 2004
Reply to Office Action of June 21, 2004


PATENT

in order to achieve different or varying O₃/TEOS ratios. Accordingly, the pending claims cannot legitimately be considered as anticipated by the Geiger patent.

The above argument focuses exclusively upon traverse of the pending anticipation claim rejections. Because the Geiger patent is prior art to the instant application only under 35 U.S.C. 102(e), and because the instant application and the Geiger patent are commonly assigned to Applied Materials, Inc., the Examiner is reminded that under 35 U.S.C. 103(c) the Geiger patent is not eligible to support any prospective obviousness rejection of the pending claims.

In conclusion, the instant office action marks the fifth consecutive (and non-final) office action issued in this case. In view of the foregoing arguments, it is respectfully asserted that all claims pending in this Application remain in condition for allowance, and prompt issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Kent J. Tobin
Reg. No. 39,496

TOWNSEND and TOWNSEND and CREW LLP
Tel: 650-326-2400; Fax: 415-576-0300
KJT:ejt
60259094 v1